

## **REMARKS**

In response to this Office Action, Applicant has amended claims 1, 9, 14 and 22 and has added new claims 23 and 24.

**The Examiner objected to the specification because the parent application data on page 1 needs to be updated to reflect that the application is now U.S. patent 6,679,559; and because the recitation of U.S. Patent No. 2,571,203, should have instead referenced Patent No. 2,751,203.** In response, Applicant has made the amendments to the specification in accordance with the Examiner's requirements.

**The Examiner objected to claims 1, 9 and 22 because of a number of informalities.** In response, Applicant has removed the word "which" from line 20 of claim 1 and has included the word - - wherein - - so that the phrase now reads "wherein said at least one bearing rotationally supports". The Applicant has also deleted the wording "counter rotating" from claim 9 and has ended claim 22 with the required period.

**The Examiner rejected claims 1-22 under 35 U.S.C. 102(b) as being anticipated by U.S. patent 4,036,529 to Hawthorne et al.** In response to the Examiner's rejection of independent claims 1 and 14, Applicant has amended claim 1 to indicate that the pair of bearing housings is provided at only one of the first and second ends of the auger flights. The Applicant has amended claim 14 to indicate that the auger flight support includes a plurality of bearing housings disposed along the length of

each auger, with only a single bearing housing connecting each pair of axially adjacent auger flights together. Applicant respectfully submits that these amendments distinguish between Applicant's auger system and Hawthorne's auger system.

Both Hawthorne et al (hereafter Hawthorne) and the Applicant disclose a mining system that includes side-by-side augers. Those side-by-side augers lie parallel to each other. The augers are each made up of a number of auger flights connected together end to end to form a longitudinally aligned structure. It is the manner in which the auger flights are connected together in Hawthorne's device and Applicant's device that differs significantly.

Hawthorne discloses that in his mining system there are two side-by side auger conveyors (i.e. parallel augers) and as is stated in the Abstract of the patent:

"Each auger conveyor has a shaft and a flight around the shaft which shafts are journaled through bearings at each end to a spacing member...."

(Emphasis added by Applicant)

In other words, each auger flight in the system has a bearing housing at a first end and another bearing housing at a second end. The fact that the bearing housings are disposed at both ends of the auger flights can also be very easily seen in Fig. 2 of the patent. The bearing housings at each end of the pair of side-by-side auger flights are connected together by a transverse spacing member 55, i.e., there is a spacing member 55 at both of the first end and the second end of each side-by-side pair of auger flights. The two spacing members 55 and two side-by-side augers form a unitary auger component and a plurality of the unitary auger components (hereinafter referred to as units) are connected together end to end when Hawthorne's system is used

during a mining operation.

Hawthorne also discloses that the two spacer members 55, disposed at both ends of the unit, are connected to each other by a rigid longitudinal member 17. The member 17 lies intermediate the two side-by-side auger flights. This can be most easily seen in Fig. 2 of the patent. The patent further discloses that the longitudinal member 17 is a truss and this can be seen in a number of the figures - such as Fig. 3. The Examiner stated in the action that Hawthorne also discloses, in Figs. 6&7, a support leg which extends downwardly to engage the surface of the ground. The Examiner stated in the action that the support leg 76 extends downwardly from the tie bar. However, Hawthorne discloses in column 2, line 40 of the patent:

“Fig. 5 is a top view of a unitized auguring pair illustrating an elongated skid attached to the longitudinal member.”  
(Emphasis added by Applicant)

The supporting member extends downwardly from the truss that is disposed intermediate the side-by-side augers, it does not extend downwardly from the spacing member disposed at one of the ends of the unit. As may be clearly seen from Fig. 6 of the Hawthorne patent (Fig. 6 being a side view of the unitized auguring pair of Fig. 5), not only does the skid extend downwardly from the longitudinal member 17 and not from the spacing member 55, the structure engaging the ground does so along the entire length of the unit. The skid is not positioned at one end of the unit only. Furthermore, Applicant respectfully submits that Hawthorne's skid is not a single supporting leg - it is in fact two supporting legs. Column 4, line 46, of Hawthorne states:

“In the embodiment illustrated, particularly referring to Fig. 7,

two skids 75a and 75b are illustrated in order to provide better support for the twin augers on top of the ledge or cusp 78. Skids 75a and 75b provide horizontal stability to the auger assembly 15, that is, with two support members, the auger assembly will tend to remain horizontally stable and not rock so that flights 44 or 45 will drag on the bottom of the hole being bored."

(Emphasis added by Applicant)

When Hawthorne's device is being used to drill into a hillside, for example, and it is necessary to connect two units together end to end, then, aside from the drive shafts, the following components will lie between the first end of one unit and the second end of the other unit:

1. Two pairs of bearing housings - one pair of bearing housings connected to a first end of each of the side-by-side auger flights in the first unit and a second pair of bearing housings connected to a second end of each of the side-by-side auger flights in the second unit;
2. Two spacing members connecting each pair of bearing housings together.

Furthermore, Hawthorne's device also include;

3. A longitudinal truss connecting the two spacing members together;
4. Two support legs extending downwardly from the truss.

In Applicant's device, on the other hand, when a first side-by-side auger pair (hereinafter referred to as an auger pair) is connected to a second auger pair, then aside from the drive shafts, the following components will lie between the first end of the first auger pair and the second end of the second auger pair:

1. One pair of bearing housings;
2. One tie bar connecting the bearing housing together
3. One support leg extending downwardly from the tie bar to engage the ground intermediate the side-by-side auger flights.

It should be noted that in Applicant's system, the side-by-side auger pair only has one pair of bearing housings connected to only one of its first and second ends - there are no bearing housings mounted on the other of the first and second ends of the auger pair. The bearing housings on the one end of the auger pair are connected together by a single tie bar. It is important to note that the other of the first and second ends of the auger flights are not connected to each other until a second auger pair is connected to the first auger pair. There is also no longitudinal member or truss disposed intermediate the side-by-side auger flights in Applicant's device.

Applicant's device consequently has fewer component parts disposed longitudinally intermediate the side-by-side auger flight pairs than does Hawthorne's device. Consequently, there are fewer components in Applicant's device to break down and fall into disrepair thereby potentially reducing the costs for maintaining the system. Furthermore, Applicant's device is lighter in weight than Hawthorne's device because of the reduced number of components positioned intermediate the side-by-side auger flight pairs; Applicant's device is more easy to manouvre because of the reduced weight and also requires less energy and force to push the auguring system into the side of a hill (for example) while mining a coal seam. This reduction in the weight of the Applicant's auguring system makes it cheaper to manufacture and cheaper to operate.

Furthermore, when the auger flights are being removed from the bored tunnels in the seam, the reduced weight, number and size of the downwardly extending appendages in Applicant's device (i.e. a single support leg versus Hawthorne's lengthy longitudinally extending skid) substantially decreases the likelihood that the Applicant's system's components will become snagged on lumps of coal and the like as the augers are withdrawn from the bored holes.

Applicant respectfully submits that Applicant's device offers significant cost and operating advantages relative to the device patented by Hawthorne.

Applicant respectfully submits that the amendments to claims 1 and 14 of the application distinguish between Applicant's device and that of Hawthorne. It should be noted that the objective of the Hawthorne patent was to provide a unitized pair of side-by-side auger flights. That unitized pair would be rigidly connected together so that it could be handled as though it was a single member. Applicant's side-by-side auger flight pair is connected together at one end, but does not necessarily behave as though it were a single unitary component as the two auger flights are not connected together at their second ends. The second ends of the auger flights can therefore move in opposite directions relative to each other and therefore the device does not act as a single component. Applicant has found that while it is convenient to have the auger flights linked together in some manner, it is not always advantageous to have the side-by-side auger flights act as a single unit.

In order for Claims 1 and 14 to be anticipated by Hawthorne at al, this patent must disclose each and every limitation of the claims. Applicant respectfully submits that Hawthorne does not show a device in which only a single pair of bearing housings

is disposed between longitudinally adjacent auger flight pairs. Furthermore, Hawthorne does not disclose a device in which only one tie part is disposed between longitudinally adjacent auger flight pairs. Furthermore, Hawthorne does not disclose a device in which only one support leg extends downwardly from the single tie bar to engage the ground. Applicant therefore respectfully submits that Hawthorne does not meet each and every limitation of claims 1 and 14 and consequently these independent claims, and the dependent claims 2-13 and 15-22 that depend therefrom, are not anticipated under 35 U.S.C. 102(b) by this patent.

Applicant has also submitted new claims 23 and 24 herewith. Claim 23 is dependent from claim 1 and claim 24 is dependent from claim 14. Consequently, if claims 1 and 14 are found allowable then claims 23 and 24 should also be allowed as being dependent from an allowable claim. Furthermore, however, both of claims 23 and 24 include the limitation that at least one the drive shafts connected to the pair of bearing housings includes an annular recess to reduce the weight of the system. There is no teaching in Hawthorne of the provision of an annular recess of a smaller diameter than the diameter of the remaining portion of the drive shaft. The annular recess reduces the amount of material needed to manufacture the auguring system and furthermore decreases the weight of the system, thereby reduces the costs of both producing and operating the auguring system. Hawthorne does not disclose drive shafts that include annular recesses of reduced diameter. Applicant therefore respectfully submits that claims 23 and 24 include limitations not found in the prior art and should therefore be allowable.

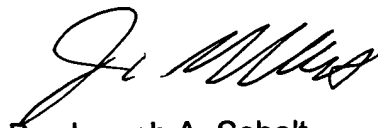
Applicant therefore respectfully requests reconsideration of claims 1-22 and

consideration of new claims 23 and 24. Applicant further requests early issuance of a Notice of Allowability with respect to claims 1-24.

Should the Examiner wish to discuss the above, he is invited to telephone the undersigned at (330) 244-1174.

Respectfully submitted at Canton, Ohio this 9<sup>TH</sup> day of NOVEMBER, 2005.

SAND & SEBOLT

A handwritten signature in black ink, appearing to read "J. Sebolt", written in a cursive style.

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